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Amendments to Claims

**Claim 1 (Currently Amended).** An isolated nucleic acid molecule encoding a *cis*-prenyltransferase enzyme, selected from the group consisting of:

- a) an isolated nucleic acid molecule encoding the amino acid sequence as set forth in SEQ ID NOs:4 and 6;
- b) an isolated nucleic acid molecule that hybridizes with (a) under the following hybridization conditions: 0.1X SSC, 0.1% SDS, 65°C and washed with 2X SSC, 0.1% SDS followed by 0.1X SSC, 0.1% SDS; or

an isolated nucleic acid molecule that is complementary to (a) or (b).

**Claim 2 (Currently Amended).** An isolated nucleic acid molecule as set forth in SEQ ID NOs: 3 and 5.

**Claim 3-5 (Canceled).**

**Claim 6 (Currently Amended).** An isolated nucleic acid molecule comprising a first nucleotide sequence encoding a polypeptide of at least 301 amino acids that has at least 70% identity based on the Smith-Waterman method of alignment when compared to a polypeptide having the sequence as set forth in SEQ ID NO:4 or a second nucleotide sequence comprising the complement of the first nucleotide sequence, wherein said enzyme has *cis*-prenyltransferase activity.

**Claim 7 (Canceled).**

**Claim 8 (Original).** A chimeric gene comprising the isolated nucleic acid molecule of Claim 1 operably linked to suitable regulatory sequences.

**Claim 9 (Currently Amended).** A transformed host cell comprising the isolated nucleic acid molecule of Claim 1 ~~chimeric gene of Claim 8.~~

**Claim 10 (Original).** The transformed host cell of Claim 9 wherein the host cell is selected from the group consisting of plant cells and microbial cells.

**Claim 11 (Original).** A host cell according to Claim 10 selected from the group consisting of russian dandelion (*Taraxacum kok-saghyz*), rubber tree (*Hevea brasiliensis*), guayule (*Parthenium argentatum*), sunflower (*Helianthus* spp.), tobacco (*Nicotiana* spp.), tomato (*Lycopersicon* spp.), potato (*Solanum* spp.), hemp (*Cannabis* spp.), sorghum (*Sorghum vulgare*), wheat (*Triticum* spp.), maize (*Zea mays*), rice (*Oryza sativa*), rye (*Secale cereale*), oats (*Avena* spp.), barley (*Hordeum vulgare*), rapeseed (*Brassica* spp.), broad bean (*Vicia faba*), french bean (*Phaseolus vulgaris*), other bean species (*Vigna* spp.), lentil (*Lens culinaris*), soybean (*Glycine max*), arabidopsis (*Arabidopsis thaliana*), cotton (*Gossypium hirsutum*), petunia (*Petunia hybrida*), flax (*Linum usitatissimum*) and carrot (*Daucus carota sativa*).

**Claim 12 (Original).** The transformed host cell of Claim 10 wherein the host cell is selected from the group consisting of *Aspergillus*, *Saccharomyces*, *Pichia*, *Candida*, *Hansenula*, *Bacillus*, *Escherichia*, *Salmonella* and *Shigella*.

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**Claims 13-15 (Canceled).**

**Claim 16 (Withdrawn).** A method of altering the level of expression of a plant *cis*-prenyltransferase protein in a host cell comprising:

- (a) transforming a host cell with the chimeric gene of Claim 8 and;
- (b) growing the transformed host cell produced in step (a) under conditions that are suitable for expression of the chimeric gene resulting in production of altered levels of a plant *cis*-prenyltransferase protein in the transformed host cell relative to expression levels of an untransformed host cell.

**Claim 17 (Withdrawn).** A method according to Claim 16 wherein the method of altering the level of expression of a plant *cis*-prenyltransferase protein in a host cell comprises over-expressing at least one *cis*-prenyltransferase gene selected from the group consisting of SEQ ID NOs: 3 and 5.

**Claim 18 (Withdrawn).** A method according to Claim 16 wherein the method of altering the level of expression of a plant *cis*-prenyltransferase protein in a host cell comprises over-expressing the *cis*-prenyltransferase gene on a multicopy plasmid.

**Claim 19 (Withdrawn).** A method according to Claim 16 wherein said chimeric gene is operably linked to an inducible or regulated promoter.

**Claim 20 (Withdrawn).** A method according to Claim 16 wherein chimeric gene is expressed in antisense orientation.

**Claim 21 (Withdrawn).** A method according to Claim 16 wherein said chimeric gene is disrupted by insertion of foreign DNA into the coding region.

**Claim 22 (Withdrawn).** A method according to Claim 16 wherein the altering the level of expression of a plant *cis*-prenyltransferase protein results in a modulation in the defense mechanism of the plant.

**Claim 23 (Withdrawn).** A method for the production of natural rubber compounds comprising:

- a) providing a transformed host cell comprising:
  - (i) suitable levels of isopentenyl pyrophosphate; and
  - (ii) a *cis*-prenyltransferase gene selected from the group consisting of SEQ ID NOs: 3 and 5, wherein said genes are operably linked to suitable regulatory sequences; and
- b) growing the transformed host cell of (a) under conditions whereby a natural rubber compound is produced.

**Claim 24 (Withdrawn).** A method for the identification of a polypeptide having *cis*-prenyltransferase activity in a rubber-producing plant comprising:

- (a) obtaining the amino acid sequence of a polypeptide suspected of having *cis*-prenyltransferase activity; and

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- (b) aligning the amino acid sequence of step (a) with the amino acid sequence of a *cis*-prenyltransferase consensus sequence selected from the group consisting of SEQ ID NO:4, 6, 8, 9, and 10, wherein the alignment shows the presence of conserved domains I, IV, and V (SEQ ID NOs: 38-40).

**Claim 25 (Withdrawn).** A method for the identification of a polypeptide having *cis*-prenyltransferase activity in a rubber-producing plant comprising:

- (a) obtaining the amino acid sequence of a polypeptide suspected of having *cis*-prenyltransferase activity; and
- (b) aligning the amino acid sequence of step (a) with the amino acid sequence of a *cis*-prenyltransferase consensus sequence selected from the group consisting of SEQ ID NO:4, 6, 8, 9, and 10, wherein the alignment shows a sequence of at least about 50 non-conserved amino acids present between the absolutely conserved tyrosine of Domain IV and the first of the absolutely conserved arginine residue of Domain V.